

Applicants: Allan Green et al.
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REMARKS

Claims 41-43 and 50-61 were pending in the subject application. By this Amendment, applicants have amended as indicated above and added new claims 62-67. Accordingly, claims 41-43 and 50-67 are pending.

Support for the amendments to claims 55 and 59 and new claim 67 may be found, *inter alia*, on page 5, line 35.

Support for new claims 62 and 65 may be found, *inter alia*, on page 5, line 18 of the subject specification.

Support for new claims 63 and 66 may be found, *inter alia*, in claim 18 are originally filed; on page 7, line 33; and on page 35, lines 24-27 of the subject specification.

Support for new claim 64 may be found, *inter alia*, page 38, lines 30-31; page 49, lines 23-24; Table 5 on page 50; page 50, lines 8-9; Example 7; and Example 9.

Rejection under 35 U.S.C. §112, second paragraph (written description)- claims 59 and 60

On pages 2 to 3 of the September 17, 2007 Office Action, the Examiner rejected claims 59 and 60 under 35. U.S.C. §112, second paragraph as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner alleged claims 59 and 60 "are indefinite and confusing in that it is unclear if the nucleic acid that is obtained from a plant refers to obtaining the nucleic acid from the plant cell that is transformed and claimed in claim 57, or if it refers to obtaining

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the nucleic acid from a plant prior to transforming the plant cell recited in claim 57."

Applicants' Response

In response, but without conceding the correctness of the Examiner's rejection, applicants have amended claim 59 to recite "...wherein the process further comprises, prior to introducing into the plant cell, obtaining the nucleic acid from a plant possessing the genetic capacity to synthesize epoxy fatty acids...".

Accordingly, applicants respectfully request the Examiner reconsider and withdraw this rejection.

Rejection under 35 U.S.C. §112, second paragraph (written description) - claim 50

On page 3 of the September 17, 2007 Office Action, the Examiner rejected claim 50 under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the written description requirement. The Examiner suggested that the deletion of the word "functional" in claim 50 would overcome this rejection.

Applicants' Response

In response, applicants have amended claim 50 as suggested.

Accordingly, applicants respectfully request the Examiner reconsider and withdraw this rejection.

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Rejection under 35 U.S.C. §112, first paragraph (enablement)

On pages 3-4 of the September 17, 2007 Office Action, the Examiner rejected claims 41-43 and 50-61 under 35 U.S.C. §112, first paragraph. The Examiner alleged "the specification, while being enabling for transgenic Arabidopsis and flax plants that are transformed with a nucleic acid of SEQ ID NO:1 or a nucleic acid encoding the delta-12 epoxygenase of SEQ ID NO:2, does not reasonably provide enablement for any transgenic plant species transformed with a nucleic acid encoding a polypeptide having the recited histidine rich regions and having at least 60% identity to SEQ ID NO:2." Additionally, the Examiner stated "the present claims are not limited to a polypeptide with any specified activity. Therefore, it would require undue experimentation by one skilled in the art to determine how to use any of the multitude of sequences encompassed by the claims, for the reasons of record set forth in the previous office action." Finally, the Examiner maintained "that undue experimentation would be required to identify and run a multitude of tests on each of the sequences encompassed by the claims to determine what activity they coded for and what the properties of the transformed plant would be."

Applicants' Response

In response, applicants respectfully traverse the rejection of claims 41-43 and 50-61 under 35 U.S.C. §112, first paragraph.

Initially, applicants respectfully point out that the enablement discussion in the September 17, 2007 Office Action is focused on product claims and even refers to "reasons set forth in the last Office Action," which rejected product claims. However, only process claims are currently pending. The enablement rejection, therefore, appears misplaced and inapplicable to the pending claims.

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For the record, applicants point out that the currently pending process claims, which require transforming a plant cell and regenerating a transgenic plant, are enabled by the specification. The subject specification discloses numerous processes for producing transgenic plants, and also contains working examples of doing so. For example, the specification contains a working example of a process for cloning epoxygenase genes from *Crepis palaestina* and expressing said genes in *Arabidopsis* plants. The results presented in Table 5 demonstrate that the process provided transgenic plants with increased concentrations of vernolic acid (from 0.9% to 15.8% as compared to 0.0% in untransformed plants).

Furthermore, the practice of the currently claimed process does not require undue experimentation because those of skill in the art routinely carry out analogous processes. The subject specification discloses a variety of methods for transforming a cell or tissue of a plant with a nucleic acid. Applicants respectfully direct the Examiner's attention, for example, to page 34, lines 4-29 of the subject specification wherein methods and journal articles describing said methods are found including:

- direct DNA uptake into protoplasts (see Krens, F.A. et al., (1982) "In vitro transformation of plant protoplasts with Ti-plasmid DNA" Nature 296, 72-74; Pazkowski et al., (1984) "Direct gene transfer to plants" EMBO J 3, 2717-2722);
- PEG-mediated uptake to protoplast;
- microparticle bombardment;
- electroporation (see Fromm et al, (1985) Expression of Genes Transferred into Monocot and Dicot Plant Cells by Electroporation" Proc. Natl. Acad. Sci. (USA) 82, 5824-5828);

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- microinjection of DNA (see Crossway et al, "Integration of foreign DNA following microinjection of tobacco mesophyll protoplasts" (1986) Mol. Genet. 202, 179-185);
- microparticle bombardment of tissue explants or cells (see Christou et al. "Stable Transformation of Soybean Callus by DNA-Coated Gold Particles" (1988) Plant Physiol. 87, 671-674);
- vacuum-infiltration of tissue with nucleic acid; and
- T-DNA-mediated transfer from *Agrobacterium* to the plant tissue (see An et al. "New cloning vehicles for transformation of higher plants" (1985) EMBO J. 4:277-284; Herrera-Estrella et al. "Expression of chimaeric genes transferred into plant cells using a Ti-plasmid-derived vector" (1983) Nature 303, 209-213; Herrera-Estrella et al. "Chimeric genes as dominant selectable markers in plant cells" (1983) EMBO J. 2, 987-995; and Herrera-Estrella et al. (1985) In: Plant Genetic Engineering, Cambridge University Press, NY, pp. 63-93).

Once the cell or tissue is transformed, the step of regeneration of plants therefrom is routine and certainly does not involve undue experimentation. No step of the pending process claims requires undue experimentation.

Accordingly, one of skill in the art would not need to engage in undue experimentation to practice the process of the pending claims.

In conclusion, the enablement rejection in the September 17, 2007 Office Action, if not misplaced, is certainly improper with respect to the pending process claims.

Rejection under 35 U.S.C. §102(e)

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On page 4 of the September 17, 2007 Office Action, the Examiner rejected claims 41, 42, 57, 58, 59 and 61 under 35 U.S.C. §102(e) as allegedly anticipated by DeBonte et al. Specifically, the Examiner stated "DeBonte et al teach transformation of Brassica napus (oilseed rape) with SEQ ID NO:1, which is at least 74.3% identical to SEQ ID NO:2 of the present application and wherein the prior art sequence further comprises three histidine boxes as specified in the claims."

Applicants' Response

In response, applicants respectfully traverse.

Applicants respectfully maintain the sequence set forth in DeBonte et al. in SEQ ID NO:2, which applicants understand to be the translation of the nucleotide sequence set forth in SEQ ID NO:1 does not meet the requirements set forth by pending claims. Applicants respectfully direct the Examiner's attention to page 8 of the BLAST Help Manual attached hereto as **Exhibit A**. Section D, entitled "Alignments," states that "several statistics are used to describe each HSP [High-scoring Segment Pair]...the number and fraction of total residues in the HSP which are identical; the number and fraction of residues for which the alignment scores have positive values...". Applicants respectfully submit as **Exhibit B** hereto the alignment results from a BLAST 2 Sequences Alignment wherein applicants aligned SEQ ID NO:2 from DeBonte et al. (U.S. Patent 5,850,026) with SEQ ID NO. 2 of the subject application (denoted as "Sequence 2" in the alignment). Applicants note the sequences exhibit 56% identity and as such, SEQ ID NO:2 of DeBonte et al. does not meet the requirement of "at least 60% identical to the sequence of amino acids set forth in SEQ ID NO.2" of pending claims 41 and 57 as well as all of the pending claims.

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Accordingly, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

In accordance with their duty of disclosure under 37 C.F.R. §1.56, applicants direct the Examiner's attention to the following disclosure, which is listed on substitute Form PTO-1449 (**Exhibit C**) and herein below. Document 1 is a continuation application of the subject application, U.S. Serial No. 09/981,124, and a copy of this document is not attached herewith as permitted under 37 C.F.R. §1.98(d)(1).

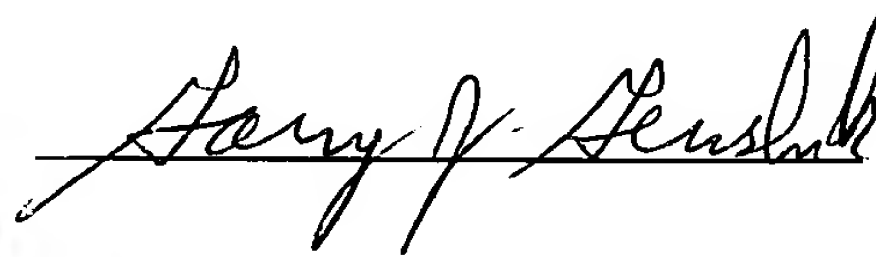
1. U.S. Serial No. 11/699,817, filed January 30, 2007; Allan Green et al, including file history thereof.

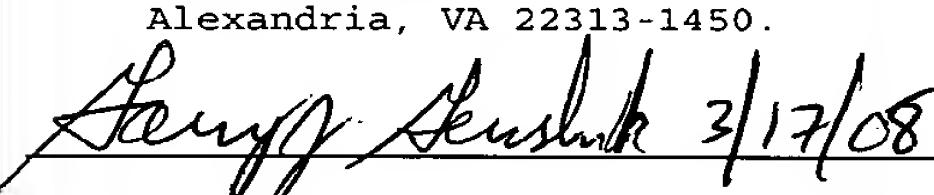
If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

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No fee, other than the enclosed \$1,050.00 fee for a three-month extension and the \$180.00 for filing of a Supplemental Information Disclosure Statement, is deemed necessary in connection with the filing of this amendment. Accordingly, a check in the amount of \$1,230.00 is enclosed. However, if any fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,



I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.	
 Gary J. Gershik Reg. No. 39,992	3/17/08 Date

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